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NOTES ON MUNICIPAL GOVERNMENT

The Relation of the American Municipalities to the Gas and Electric Light Service

A SYMPOSIUM

City of New York.—ROBERT GRIER MONROE, former Commissioner of Water Supply, Gas and Electricity.

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St. Louis.—

Boston.—EDWARD M. HARTWELL, Secretary Statistics Department, Boston

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CITY OF NEW YORK

By ROBERT GRIER MONROE, Former Commissioner of Water Supply, Gas and Electricity.

Gas and electric service in the city of New York is furnished by private corporations. The New York Gas Light Company was incorporated in 1823. That was the first. The Manhattan Gas Light Company followed in 1830. In succeeding years one company after another was chartered to make and distribute gas and later electricity. Franchises have been freely given by the legislature on the theory that the public would benefit by competition. To insure competition some of the charters contained clauses prohibiting combinations and transfers of franchises. Rival companies have, however, found it more advantageous to combine than compete, and consolidations exist irrespective of specific prohibitions. In the borough of Manhattan both illuminants have been absorbed by a single corporation, and there is no rivalry

even between producers of gas and producers of electricity. The Consolidated Gas Company of New York controls all the gas and electric light facilities in the borough of Manhattan, as well as all gas and electric light facilities in the more important sections of the borough of the Bronx. The Brooklyn Union Gas Company, another consolidation, covers the borough of Brooklyn, the second largest borough and so through the city.

Public lighting is one of the heaviest yearly charges the municipality has to meet. For sometime the cost has exceeded \$3,000,000 annually. On the supposition that independent competing companies operated throughout the city, section 530 of the Greater New York Charter directs that all contracts for city lighting have to be made after public bidding. In December, 1902, near the close of the year, customary advertisements were published in accordance with the provisions of the city charter, asking for bids for lighting the streets and public buildings of the city for the ensuing year, 1903. When the bids were opened, it was found that the same prices that had been offered in previous years were again submitted, and that throughout the five boroughs, there were no opposing bidders for supplying the same class of light to the same district. The statutory provisions as to public advertisement had been complied with, but as there was no real competition, such bids afforded no practical test of what was a fair and reasonable price. The city officials then in power, not being satisfied after investigation that the prices offered by the monopoly were fair and reasonable, rejected all bids.

For two years and a half the streets have been lighted and public buildings supplied with gas and electricity without contracts between the city and the lighting companies; nor for this period have bills presented for city lights been paid or adjusted. When the 1903 bids were originally rejected, the city did offer to make substantial payments, without prejudice, from month to month, as the service was rendered, leaving the companies in position to bring suit for whatever balance they thought due them, in order that what was a fair and reasonable price might be judicially determined. The monopoly has not been willing to sue on a *quantum meruit*. The lighting companies let the year 1903 go by without suit, with the expectation that if the fusion administration, then in control, could be beaten at the polls, the succeeding Tammany administration would pay their claims in full. But later, difficulties arose in the way of settlement even under the Tammany administration. In October, last, an adjustment was practically arrived at by the comptroller and the commissioner of water supply, gas and electricity, with the managers of the monopoly, and arrangements made for paying all claims of the companies in full, less interest. The proposed settlement was, however, so obviously against the interest of the city that it aroused public sentiment, a sentiment so strong that it not only prevented the "compromise" as it was called, from being carried out, but also induced a reluctant legislature to appoint a committee to investigate the entire light situation.

By joint resolution of the Senate and Assembly a legislative committee was directed to examine into the organization and operation of the gas and electric lighting companies, the reasonableness of their charges, the circum-

stances connected with the recent negotiations between the companies and the city officials, and to report the "result of their investigation with such remedial measures as it may deem proper." After an investigation, conducted with entire fairness and marked ability, the committee reported back to the legislature on April 29, 1905. Evidence brought out by the committee showed clearly that the companies holding a monopoly, which extended over the entire city, were largely over-capitalized. Referring to the Consolidated Gas Company, the committee said:

"The fact that the company, by rendering competition impossible, has been able to earn large dividends does not justify it in adding to the value of its plant an additional amount for good-will or earning capacity and thereby justify a continuance of excessive charges. If this were permitted it would be able to secure in perpetuity the maintenance of exorbitant rates. Extortion for a series of years would be the sufficient excuse for further extortion. Indeed, there would seem to be no escape from the conclusion that successful imposition upon the public would warrant increased charges upon the ground of enhanced good-will. The company is entitled to a fair return upon its capital actually invested, but it is not entitled to capitalize its grip upon the public."

The committee recommended that the price of gas for the boroughs of Manhattan and Brooklyn and part of the Bronx be fixed at a maximum of \$0.75 per thousand cubic feet; that in the same boroughs the price of electric current be fixed at a maximum of \$0.10 per Kilo-Watt hour, and that the price for 2,000 c. p. arc lamps be fixed at \$100 per lamp per year. This was a reduction from the then prevailing price of gas of 25 per cent. and 33½ per cent. on charges for electricity. The committee also recommended the appointment of a permanent state commission with power to regulate the supply and price of gas and electricity. The legislature enacted laws reducing the price of electricity as recommended by the committee. A bill reducing the price of gas to general consumers was defeated, but a bill was passed reducing the price of gas sold the city. A law providing for a permanent commission was also passed. The commission has not yet entered upon the performance of its duties, but it has power to render the public effective service.

To further guard against extortion, the city is now deciding upon plans for the construction of a municipal electric lighting plant for lighting the streets and public buildings.

CHICAGO.

By HUGO S. GROSSER, City Statistician, Chicago, Ill.

The Gas Service.

The gas service in the city of Chicago is furnished entirely by private enterprise which rests in the hands of one of the most powerful monopolies in this country; the People's Gas Light and Coke Company. This company, which obtained its grant in 1858, has the most all-embracing blanket-franchise ever granted to any corporation at any place. It merely grants to the company the right to lay their gas mains and sell gas in all Chicago without any limitation whatsoever of time or of place. It does not contain any pro-

vision as to the quality and the price of gas, as to the extension of its mains, or payments to the city treasury, nor any obligation to furnish light for public purposes.

Originally, this company started with a capital of \$500,000, which in 1865 was increased to \$4,000,000. To-day they have a total capitalization of more than \$68,000,000, consisting of about \$33,000,000 of stock, and \$35,000,000 of bonds outstanding. They pay a dividend of 6 per cent., and the only contribution to the public treasury is their regular property tax. Some of the companies that had obtained their franchises in territory outside of the city of Chicago were in some instances regulated as to the quality and the price of gas; and in 1891 a contract was made between the various companies originally merged in the People's Gas Light and Coke Company and the city of Chicago, providing that the price of gas to private consumers should be one dollar net per thousand after 1896, and that the companies should pay the city $3\frac{1}{2}$ per cent. of their gross receipts from the sale of manufactured gas.

In 1901 a new contract was made providing that the People's Company should furnish gas to the city at a price for the year of \$350,000, the city agreeing, at its own expense, to attend to the lighting, cleaning, extinguishing and furnishing the lamps.

The compensation to be paid the city by the People's Company was $3\frac{1}{2}$ per cent. upon the gross receipts from the sale of manufactured gas during the year, together with an additional 5 per cent. to be paid by the Fuel Gas Company, a company also part and parcel of the People's, said percentages in the aggregate not to be less than \$375,000, leaving a balance to the city's credit of \$25,000 for the year.

This balance was to be expended toward the equipment of 25,000 street lamps with incandescent burners and mantles. The agreement provided for the examination of accounts by either of the parties, and also that the obligation of the People's Company to pay the city should terminate upon any attack by the city upon the rights, privileges or franchises exercised at that time by the company.

October 15, 1900, the City Council passed an ordinance regulating and fixing the price of gas at a maximum rate of seventy-five cents per thousand cubic feet. The People's Gas Company, of course, strenuously resisted this ordinance, and fought it in the courts. The United States Supreme Court finally (last December) decided that the company had no contract rights in the premises, and that rate and other regulations could be ordained by city or state legislative bodies as may be the case. In order to remedy a doubt as to whether the city has the power to regulate gas rates, not having been especially authorized to do so, the last legislature passed a law conferring upon the city of Chicago power and authority to fix the rates and charges for the supply of gas by any company in the city. This law will be submitted for approval to the voters of the city next November, and will, no doubt, receive an immense majority, giving a rate of seventy-five cents as against \$1.00.

Meanwhile, however, the People's Company cancelled the contract entered into with the city in 1901, upon the claim that contrary to its provisions the

city had attacked its rights and privileges. Since then there has been no agreement between the city and the company; the city has paid nothing to the gas company on account of gas furnished for street lamps, etc.; the company has not paid any compensation to the city, and the present relation of the city of Chicago to the People's Gas Light and Coke Company is in every way not only unpleasant, but amounts to veritable warfare.

The Electric Light Service.

Entirely different from the gas situation are the conditions in the electric light service. This at least, so far as public lighting is concerned, is furnished by the city itself, while private lighting is furnished by private enterprise. Up to the present time the city was not authorized to sell electric light to private consumers, but last winter the state legislature embodied in the law referred to before, a provision empowering the city to sell surplus electricity for light and power, without enlarging its present power to own, construct, or acquire electric lighting plants. It has been estimated that the city will be enabled to sell a considerable amount of electricity, its plants being sufficiently large to produce much more than actually needed for municipal purposes.

The city began to manufacture electricity for lighting streets as early as 1887. At that time the work was under the supervision of the commissioner of public works, and the lighting bureau remained in that department until 1898, when the present department of electricity was created by ordinance of the council, and placed in charge of the city electrician, an officer appointed for two years by the mayor with the consent of the city council. This department has also charge of the police and fire alarm telegraph. All its employees, with the exception of the city electrician, are absolutely under civil service.

The capital needed for the enterprise was entirely raised by taxation in the general appropriation bill. In the first year, the total expenditure amounted to only \$39,976.25, which was sufficient to erect a power house and place 105 arc lights in operation. At the end of the first ten years, the city had expended for construction and operation a total of \$1,693,222.51, and operated 1,054 arc lights. At the beginning of this year, the city has three power plants, and operates 5,034 arc lights. The total net expenditures for construction and operation until and including December 31, 1904, were \$4,098,837.38. This does not include interest on the money expended, which must be added to the actual expenditures, and amounts to \$1,274,000.27, making the total amount involved \$5,372,837.65.

The average yearly cost per light was \$55.16 in 1904, and during the last five years varied but little, depending upon the price of coal. In this cost, of course, all expenses are included except interest. The city still rents a few arc lights—698—from private companies at a rate of \$103 per light per year. Since 1887, when the rental was not less than \$200 per light per year, the price has been steadily reduced year by year, but is still almost twice as great as the price of the municipality operated lights. If the city had rented all its lights during the entire time at the rate paid for each year, it would have

expended a total amount of \$4,677,345.50. The total interest of the cost of the rented service would have been \$1,142,513.28, making the total amount involved \$5,819,858.78, showing an amount saved by the city of \$447,021.13, and the city has its plants as an additional profit or asset, representing a value of \$3,207,179.94.

There were in operation December 31, 1904, a total number of lights of every kind of 37,222, of which 24,951 were gas lights, 6,478 gasoline lights, 5,098 electric lights operated by the city and 695 rented electric lights. All these lights produced 12,858,000 estimated candle power, at a total cost including all expenses for city lighting of \$936,482.20.

The private light service is furnished, as stated before, by private enterprise, and is in the hands of several companies, the largest of which is the Chicago Edison Company, controlling the greater part of the electric business in the city. Its relation to the city of Chicago is much like that of the People's Gas Light and Coke Company. It obtained its franchise piece-meal in the various towns afterwards annexed to the city of Chicago, almost without condition. Municipal authorities have no control over the accounts of the company; it pays no compensation to the city, and can do almost what it pleases except as to the physical conditions in the streets, etc. It owns four central electrical power stations, with an indicated horse-power of more than 40,000. It was organized in 1887, and holds a perpetual license from the Edison Light Company of New York to use all its present and future patents in consideration of the parent company being given a percentage of all issues of securities representing new capital.

The Edison Company has an authorized capital stock of \$15,000,000, and has outstanding bonds of \$6,983,000. Since 1889 it has paid 8 per cent. in quarterly dividends. Its gross revenues during the fiscal year 1904-05 were \$4,051,082; its operating expenses, \$2,627,468.

The Commonwealth Electric Company, which practically is part of the Edison Company, having the same president and almost identically the same directors, is capitalized at \$13,250,000, and obtained its franchise in 1897 for a term of fifty years. The franchise contains a provision as to charges, prohibiting a charge exceeding 1 per cent. per hour. A maximum charge is provided of \$10.50 per month for each arc light of 1,600-candle power when operated the entire night, and of \$7.50 per month when operated until 12.30.

The company is held to pay a compensation to the city treasury of 3 per cent. of the gross revenues after the expiration of five years, and since it began operations it has paid into the city treasury the sum of \$93,134.95.

Another of the larger public service companies is the Cosmopolitan Electric Company, which obtained its franchise in 1895 under similar conditions. In order to show the character of franchises granted to electric light companies during the last few years, I quote that of the Dearborn Power Company which obtained its franchise in March, 1903, and an amendatory franchise in April, 1905. The franchise is "For the purpose of supplying electricity for light, heat and power" within a limited territory. The rights are granted for a period of ten years, and may be terminated at any time prior at the discretion of the mayor. During the life of the ordinance the

company pays to the city of Chicago 10 per cent. of its gross receipts, and the city authorities have access to the books and accounts of all fiscal operations.

The company is prohibited from selling, transferring, assigning or leasing, or entering into any agreement so to do, any of the rights granted without first obtaining the consent of the city of Chicago thereto. The city reserves the right at any time prior to the expiration of the term to take over the property, and operate the same as a municipal enterprise, paying therefor the then cost of duplication less depreciation of the property, but nothing for earning power or franchise values, the purchase price to be determined by appraisement. There are about twenty of these smaller companies furnishing electrical light within greatly limited territory, whose franchises are of nearly the same character as the one quoted.

ST. LOUIS

The Gas Service.

The gas lighting service of the city of St. Louis is furnished by a single private enterprise, the Laclede Gas Light Company. From 1846 to 1873 there was only one company, the St. Louis Gas Light Company. The territory of the city was then divided; the Laclede Company supplied the northern, and the St. Louis the southern district. In 1890 the Laclede Company bought out all the stock of the other company and is now operating under its charter. This company has no exclusive franchise, and any other company may organize under state laws and obtain permission from the city to lay pipe lines, etc. The acts of the legislature simply authorize the gas company to lay pipes and appurtenances, and to enter into contract with the city or others for furnishing gas. The city makes a contract for lighting the streets, public places and public buildings, with gas, gasoline and electricity, prescribing the districts in which the different methods are used. The contractor obtains gas from the gas company under private arrangement with this company.

The general taxes are assessed on the valuation of property and effects the same as on all other property. The amount for 1904 was \$1,441,783.15. Under contract of February 28, 1873, the maximum price per thousand cubic feet was fixed. This contract expired May 1, 1890, and at that time the municipal assembly tried to fix a maximum price for gas furnished to private consumers. In the litigation which followed, the Supreme Court held that the municipal assembly had no right to fix this price. At present the prices charged for gas furnished the city and to private consumers are: Light, \$1.10 per thousand cubic feet; fuel, 90 cents per thousand cubic feet with 10 per cent. discount if the bill is paid within ten days after its date. There are no free lights. The board of public improvements, under the contract for public lighting, fixes the location of all lamps and in that way fixes the number of lamps per mile. If necessary to remove the lamps, the cost is paid by the city at contract price. The city at present does not have the right to purchase the gas plant.

The Electric Light Service.

The electric light service is also furnished by private enterprise, though some of the public buildings are supplied from plants in or near these buildings. The general taxes on the valuation of property and effects are the same as on all other property and effects. Practically all the electric light and power companies are consolidated; that is, the capital stock of the company is held by the stockholders of the controlling company or plants, and franchises are leased by said company. The amount of taxes paid in 1904 was \$12,310.36, also 5 per cent. of the gross receipts of each company. The aggregate amount received during the last fiscal year was \$73,300.04. The prices charged for public and private service are not controlled by the city. The standard price at which the companies contract to furnish current for lighting and motor service is two Kilo-Watt hours per sixteen c. p. lamp, or equivalent at ten to twelve cents; but in special cases other rates are made. Under the contract for lighting the streets, alleys and public places, the board of public improvements designates the location and number of lamps. The city has reserved the right to purchase the conduits under grant of franchises, but no rights have been reserved to purchase the plants. The companies are liable on penal bond filed with the city register in the sum of \$20,000 with approved securities. The officials are also liable for violation of the provisions of the franchise, subjecting them to fines of not more than \$500. There are also penalties for illegal use of the wires, removal of wires, stringing of wires without permission, etc.

BOSTON

By EDWARD M. HARTWELL, Secretary Statistics Department, Boston.

The history of the Boston gas companies as regards their charters, quarrels and consolidations, is a tortuous and intricate one. At present the city of Boston has no gas works or electric lighting works of its own, and exercises no special control of the companies from which it purchases gas or electric light for lighting its streets, parks and public buildings. Such companies pay nothing to the city for the right to do business, and stand in the same relation to the city with respect to taxation as other business corporations. They make no special reports to the city government, which has no jurisdiction over their accounts or reports. Gas and electric light companies, however, are subject to oversight and control by the Board of Gas and Electric Light Commissioners of the Commonwealth of Massachusetts.

In accordance with legislation passed last winter, gas is now furnished in those sections served by the newly consolidated companies for 95 cents to private consumers, and \$0.7930 cents per thousand feet to the city for its public buildings. After January 1, 1906, the Consolidated Company will furnish gas at \$0.90 per thousand to private consumers, and \$0.7430 per thousand to the city for its public buildings.

Street lights are practically furnished by the Rising Sun Light Company, a corporation operating under a charter granted by the State of Maine. This

company owns lamps and posts. In 1904 there were 9,337 Welsbach gas lamps in use, paid for at the rate of \$30 per lamp per annum. In accordance with the contract of the city with the Rising Sun Company, the city derives benefit from any reduction in the cost of gas in Boston; so that the city is now, *i. e.*, since July 1, 1905, paying \$29.40 per lamp per annum, and will pay \$28.80 for the same after January 1, 1906. In 1904, 1,491 open-flame and 538 Welsbach naphtha lamps were in use for public street-lighting, at \$22.81 and \$29.20 per lamp per annum respectively, and the same rates for naphtha lamps obtain in 1905.

In 1904 there were 3,699 electric arc lights in use for public lighting against 3,731 now in use (1905). Then, as now, the price per lamp varied from 33 to 35 cents per night, or \$120.45 to \$127.75 per annum. Of incandescent lamps there were thirty-eight in 1904, at prices varying from \$2.50 to \$3.00 for some, and one cent per lamp per hour, less 25 per cent. for others.

CLEVELAND

By F. E. STEVENS, Secretary Municipal Association of Cleveland.

The Gas Service.

Two companies furnish the gas supply of the city—the Cleveland Gas Light and Coke Company to that portion of the city east of the Cuyahoga River, and the People's Gas Light Company to the portion west of the river.

The original grant was made to the first of these two companies in 1849. Permission was given to lay pipes under supervision and certain restrictions. The company was required to furnish gas to the city for public lighting at a price not to exceed that paid in Buffalo or Cincinnati, and to citizens at a price not to exceed \$3.00 per thousand cubic feet. The city was to furnish and own the lamps. The city might also extend pipes and connect with mains when the companies refused to do so. For this service the company was to reimburse the city before they could use these pipes to deliver gas to private consumers.

The charter of the second company was granted in 1867. It contained provisions similar to those already stated, except that it was required to furnish gas for public lighting at a price not to exceed \$2.25. After twenty years the city was to have the right to purchase the plant at a fair price to be fixed by five disinterested persons.

In the franchises the right is reserved by the city council to regulate the price of gas for ten-year periods. The last ordinance for this purpose was passed in July, 1900. By the terms of this ordinance the maximum and minimum price to be charged for public and private consumption is fixed at **75 cents** per thousand cubic feet. The companies are required to install and maintain meters without charge to the consumer, but a deposit of \$5.00 is required for each meter installed, this deposit to be returned upon discon-

tinuance of the use of gas or removal of the meter. No free lights for public service are provided. The companies are required to pay into the city treasury 6½ per cent. of their gross receipts. For the year of 1904 the receipts from this source amounted to \$86,623.98. This amount is additional to the receipts from taxation of the property of the company. The companies are subject to a general property tax the same as any other corporation or individual. Hitherto it has been very much under-assessed. The assessment, however, more than doubled in the last three years, while previously very trifling increases had been made from year to year.

Until recently the gas companies supplied and maintained the equipment of street lighting. A different policy now obtains. The city owns and maintains all of the equipment and lights the lamps. The gas for the lamps is, however, purchased of the companies. By means of frequent tests the value of the gas consumed by each lamp per year is for the present fixed at \$5.43. Nine thousand three hundred and seventy-seven lamps of seventeen-candle power are thus provided. The city also maintains 1,500 gasoline lamps. These latter are being gradually displaced by the gas lamps.

As a means of determining the amount due the city from the receipts of the gas companies the companies are required to submit, semi-annually, sworn statements showing the quantity of gas manufactured and the receipts from its sale. The city is empowered to examine the books and accounts of the companies and this is done by the city auditor. The city has no right under the franchises of the companies to purchase their plants.

Some two years ago a franchise was granted to the East Ohio Gas Company to supply natural gas for fuel purposes. The old gas companies vigorously contested this grant, as a large portion of their business consisted of supplying gas for fuel. The natural gas company supplies gas for 31 cents per thousand feet. That the entry of this company into the field has had a very considerable effect upon the business of the artificial gas companies cannot be doubted.

The Cleveland Gas Light and Coke Company, capitalized at \$4,000,000 has paid dividends of 8 per cent. until recently, when the dividend was reduced to 6 per cent. The People's Gas Light and Coke Company, capitalized at \$1,000,000 maintains its regular 7 per cent. dividend payment, the natural gas company not having as yet encroached greatly upon west side territory.

The Electric Light Service.

The electric light service is supplied entirely by one company—the Cleveland Electric Illuminating Company. It has a perpetual franchise and the city has no right to purchase the plant. There are no restrictions upon charges and no contract right in the city to regulate service or charges. It supplies the city with 1,238 arc lights, 2,000-candle power, at a cost per annum of \$73.56 each. This charge is a considerable reduction from the figures of former years.

The city uses no incandescent lights on its streets. The charges for private lighting are as follows: For an average use of forty hours per month of the

lamps connected at 12½ cents per unit; and for any current in excess of said average use of forty hours per month of the *lamps connected* at 5 cents per unit. (A unit is 1,000 Watt hours.)

In consideration of 5 cent rate, consumer agrees that his bill shall not be less in any month than \$—, being a basis of \$2.50 for each arc lamp and \$1.00 for each ten sixteen-candle power lamp or proportion thereof installed. For power, 12½ cents for each 1,000 Watt hours, less 50 per cent.

The above are the rates charged and published, but wherever there is competition from private power companies in power blocks, etc., secret rates are made. Gas lamps are located at an average distance from each other of 150 feet and arc lights are placed from 300 to 400 feet apart. All streets are not, however, equally well lighted, the above apportionment of lights indicating the average provision for the streets.

BUFFALO

The Gas Service.

The gas lighting service of Buffalo is rendered by a private enterprise under the name of the Buffalo Gas Company. This company, which controls the entire lighting of the city (by gas) was organized in October, 1899, and is a consolidation of the Buffalo City Company and the Buffalo Gas Light Company. It also owns the entire capital stock of the Buffalo United Gas Light Company and about 90 per cent. of the People's Company. The company operates under a perpetual franchise. The requirements as to service are fixed by periodical contracts. The contract now in force covers a five-year period from March 1, 1902, to March 1, 1907. The company is bound to light, extinguish, clean and keep in repair the public street gas lamps, for which service it receives 17 cents per month per lamp. It is required to furnish gas of not less than eighteen-candle power to both the city and the private consumer. The company has a capital stock of \$2,000,000, 6 per cent. non-cumulative preferred, and \$7,000,000 common issued in exchange for the shares of the old companies. There is a bonded indebtedness of \$5,900,000 first mortgage 5 per cent. gold, issued in 1897, due in 1947, secured by all the property of the company and by a pledge of the bonds and stocks of the People's Gas Light and Coke Company owned by the Buffalo Gas Company. A franchise tax has been levied annually since 1900, but no such tax has been paid for any year. The tax for the year 1904-05 is \$39,187.49 plus \$920.95 levied in name against a constituent company.

By the contract already mentioned the prices for lighting are to be as follows:

Public Lighting.—To light not less than 5,500 lamps:

March 1, 1902, to March 1, 1903, \$0.79 per 1,000 cubic feet.

March 1, 1903, to March 1, 1904, .78 per 1,000 cubic feet.

March 1, 1904, to March 1, 1905, .77 per 1,000 cubic feet.

March 1, 1905, to March 1, 1906, .76 per 1,000 cubic feet.

March 1, 1906, to March 1, 1907, .75 per 1,000 cubic feet.

There are no free lights.

Private Consumers:

March 1, 1902, to March 1, 1903, \$1.1999 per 1,000 cubic feet.

March 1, 1903, to March 1, 1904, 1.1998 per 1,000 cubic feet.

March 1, 1904, to March 1, 1905, 1.1997 per 1,000 cubic feet.

March 1, 1905, to March 1, 1906, 1.1996 per 1,000 cubic feet.

March 1, 1906, to March 1, 1907, 1.1995 per 1,000 cubic feet.

Twenty cents per 1,000 cubic feet to be deducted if paid on or before the tenth of the month. Notices are sent on the first of each month. The company had in June, 1905, 645 Welsbach lamps and 5,134 others, making a total of 5,779 lamps in operation.

The Electric Light Service.

The electric light service is also furnished by a private enterprise known as the Buffalo General Electrical Company. The relations of the electric company with the city are fixed by periodical contracts. The one now in force, dated March 1, 1902, is for five years. The company was incorporated in 1892. The capital stock authorized was \$5,000,000 and \$2,706,500 of stock was issued. The bonds issued were \$2,375,000 first mortgage 5 per cent. due February 1, 1939. There are no payments to the city in addition to the general property taxes and the state franchise tax. This franchise tax for 1904-05 was \$30,071.94. For public light the company is to provide enclosed series, arc, direct current system. The city is to use not less than 2,500 lights, each of which is to be 2,000 candle power. The maximum price to the city is \$75.00 per lamp per annum during the period of the contract. There are no free lights. There is no requirement as to the maximum price of current for private consumers. The total number of lamps in streets and public places in the city is 2,792 arc lamps and 2,000 incandescent lights. There is no specific right to purchase the plant at the end of a given time; but action, if any, may be taken by the municipality under state law.

NEW ORLEANS

By JAMES J. McLoughlin, New Orleans, La.

The city of New Orleans has no municipally owned light service. All streets and public places are illuminated with electric light. A contract with the gas company for lighting purposes is restricted to a few public buildings. The gas company is operating under a monopoly grant from the legislature of Louisiana, under an act passed in 1873 by which the company was given the exclusive privilege of making and vending gas in the city of New Orleans for a period of fifty years beginning with 1875. The sole and only consideration paid for this valuable franchise is an obligation to furnish gas to the

Charity Hospital free. The maximum price allowed to be charged by the company under its charter is \$4.00 per thousand cubic feet.

The city gets no free service whatever, and she pays for the gas consumed by her, at the same rate that private consumers pay. The gas company pays taxes on its real estate and its franchise; the latter being on a very low valuation. Some years ago a corporation, called the New Orleans Railways Company, organized under the laws of the State of New Jersey, gained control of the street railroads, the gas company and the electric companies, and it still operates these public utilities.

The gas company having a monopoly grant from the legislature, it cannot be interfered with. New electric companies are organized every few years, but are always absorbed by the controlling company. The price of gas at present is \$1.40 per thousand cubic feet, subject to cash investment of much less, as a great many shares of it, were issued without payment of bills. The present gas company derives the bulk of its income from fuel gas, as the electric company has practically driven gas out of the field for illuminating purposes, where the electric wires are strung. The capital of the gas company is \$3,750,000—but represents an actual cash investment of much less, as a great many shares of it, were issued without any cash being paid, they being issued in payment of franchise grant. In order to understand this, it is necessary to relate the history of gas illumination in New Orleans.

In 1835, by an act of the legislature, the New Orleans Gas Light Company was granted the exclusive right for forty years, of selling gas in the city of New Orleans. In 1860 this monopoly was extended to expire in 1895. In 1873 the legislature of that year gave the Crescent City Gas Light Company, a new corporation, the monopoly right of making and selling gas, for fifty years from the time that the franchise of the old company expired.

A great deal of litigation followed, which finally resulted in the merging of both the old and the new companies, with a nominally paid-up capital of \$3,750,000, of which, new shares to the amount of \$1,250,000, were given to the holders of the new franchise for the franchise, and the works, etc., were transferred by the old company to the consolidation. The city has no right to purchase the plant, and has no control whatever over the accounts of the company or over its rates. The shares of the gas company are leased by the New Orleans Railways Company which now operates the franchise.

The Electric Light Service.

The electric service used in New Orleans is furnished by private corporations. The franchise rights are not exclusive, as the control of the streets is vested in council. The right to use the streets for purposes of this kind, is usually granted without consideration, with the exception, that some years ago, when the underground conduits were ordered established in the business portion of the city, the company was obliged to reserve for the city enough space to place its fire alarm wires in the company's conduits.

The maximum rate is not fixed in the franchise, and the city has no control whatever over the operation or finances of the electric company. The electric companies now in operation, are all under one control and owned

by the New Orleans Railways Company, which has a contract for lighting the city of New Orleans with electricity, for the period ending September 30, 1905, and a second contract for a period of ten years thereafter.

Under the old contract, about to expire, the city pays \$127 per annum for each arc light, for incandescent lamps it pays the same as private consumers. Under the new contract, which will begin October 1, 1905, the city will pay \$75 per annum per arc light for overhead wires, and \$90 per annum per arc light for underground wires. The underground system comprises a very small portion of New Orleans, and has 476 arc lights, while the overhead system has 1,251 arc lights.

The tariff for private consumers is twenty cents for Kilo-Watt hour for incandescent service, and ten cents for motors or power rates, which are regulated by meters. This tariff for private consumers, although printed in the company's contracts, is not strictly adhered to, as dozens of private consumers have made contracts with the company upon the best terms that are obtainable, which vary greatly in various cases.

A competitor in the electric business has appeared during the last year, and is now taking contracts for light to be furnished after next January. Whether or not this is a permanent institution, is yet to be seen. It may be absorbed by the present company, as has been the fate of all its predecessors.

The consolidation of these companies through the New Orleans Railways Company, has been financed as usual, by the issuance of bonds, and preferred and common stock, in the usual manner of paying the nominal price of about two or three times the cash value of the property.

MILWAUKEE

By JOHN A. BUTLER, Milwaukee, Wis.

There is no municipal gas service in Milwaukee. By an act of the legislature in 1852 the Milwaukee Gas Light Company was given the exclusive right to use the city's streets for the purpose of piping and selling gas for illuminating purposes. The grant of this franchise appears to have been practically unconditional. There are no free lights, and no money payments to the city except taxes which are levied on the assessed valuation of the company's property which includes its franchises. The city has no control of the company other than the usual police powers as to streets and alleys. There is no reserved right to purchase.

The authorized issue of gas company bonds is \$10,000,000. The amount sold is \$7,300,000 and the amount of stock issued is \$4,000,000. The following is the schedule of prices of gas used for illuminating purposes:

First 1,000 cubic feet, \$1.20; discount .20, net \$1.00 for prompt payment. Next 34,000 cubic feet, \$1.10; discount .20, net .90 for prompt payment. Over 35,000 cubic feet, \$1.00; discount .20, net .80 for prompt payment.

For Fuel Purposes.—First 10,000 cubic feet (per 1,000 cubic feet), \$1.00; discount .20, net .80 for prompt payment. Next 10,000 cubic feet (per 1,000

cubic feet), .90; discount .20, net .70 for prompt payment. Over 20,000 cubic feet (per 1,000 cubic feet), .80; discount .20, net .60 for prompt payment.

The number of public lights is 2,596 and the annual charge per light \$28.

The number of lights per mile of street varies and cannot be stated.

The streets are lighted by gas and electricity, and by oil in the outlying districts. The latter service is, however, limited.

The electric light is furnished by the Milwaukee Electric Railway and Light Company, which, as a consideration for a grant of valuable additional railway franchises, and the extension of others, sells twenty-five street car tickets for \$1.00, and is required to furnish electricity to swing, elevate and operate all bridges crossed by its lines.

There are no established maximum prices for private lighting. There is a good deal of agitation at present as to uniform rates and a maximum price, and the fact that varying provisions for rates and a maximum price appear in the franchises of the Edison Company, the Badger Company and the Milwaukee Power and Light Company, all of which were absorbed by the Milwaukee Electric Railway and Light Company, may prove to be a means of securing uniform rates and a maximum price from the latter company for **lighting**.

The number of underground wire lights is 1,108. The annual price per light is \$90. The number of overhead wire lights is 818. The annual price per light is \$81. The number of miles of street occupied is 530.014. The electric lights are supposed to be 2,000-candle-power lights. This is very doubtful. In fact they probably do not exceed 1,200- or 1,500-candle-power. No free electric lights are furnished to the city.

All electric lighting franchises granted up to June 8, 1896, were merged in the Milwaukee Railway and Light Company, but said franchises do not prohibit any person or corporation from producing and selling electric light to private parties. Light is accordingly furnished to many consumers by private individuals and estates, which operate on licenses or permits granted by the common council, subject to the general police control of public thoroughfares.

The city has in the past fifteen years entered into five-year contracts with the Milwaukee Electric Railway and Light Company and the Gas Company to light the streets by electricity and gas. The last contract for electric street lighting will expire on December 20, 1905. The city has no control except as specified in these contracts.

The capitalization of the Milwaukee Electric Railway and Light Company is about \$15,000,000. "All the real estate and personal property, owned and used in the operation of a street railway or electric lighting business, is exempt from general taxation, but in lieu of taxes the corporations operating and maintaining such street railways or electric light systems, pay a license fee of 4 per centum on gross cash receipts, if the same exceeds the sum of \$500,000 per annum; and 2 per centum if such companies' gross cash receipts fall below \$500,000 per annum." (Chapter 354, laws of 1899.) The Milwaukee Electric Railway and Light Company's gross receipts upon railway and lighting system for the year 1904 were \$3,191,908.62, on which a tax of 4 per centum

was paid, which equals \$127,676.34. The Milwaukee Light, Heat and Traction Company's gross cash receipts for the year 1904 were \$456,279.01, on which a tax of 2 per centum was paid, which equals \$9,125.94.

The law (Chapter 354 of the laws of 1899) provides that the taxes or license fees paid by street railway and electric light companies are to be proportioned among the cities, towns and villages through which said railway or light systems are operated, upon the mileage basis of track and wire; but, in making such division the city where the principal portion of such railway or lighting business is maintained, shall receive three portions of such fee per mile within its boundaries to one portion in towns and villages. Twelve per centum of the taxes or license fees thus received by the municipality are to be paid to the county treasurer, the same to be applied as state and county tax. Thus, for instance, the sum of \$127,676.34, above mentioned, does not entirely find its way into the city treasury. There must be deducted the amount which goes to the towns and villages outside of the city through which said systems are operated. Finally, there must be deducted 12 per centum which goes into the county treasury, leaving the net amount which goes into the city treasury, \$98,529.62. Of the \$9,125.94 taxes paid by the Milwaukee Light, Heat and Traction Company under this provision of the law, only \$136.34 finds its way into the city treasury.

Finally, of the public service corporations in this city there is only one—the Milwaukee Gas Light Company—which is now directly taxable by this department. Two years ago, its total assessment was \$1,700,000. This was increased by \$1,550,000, making a total assessment of \$3,250,000, now yielding an annual tax revenue to the city of approximately \$75,000. The balance of the public service corporations located and doing business here, as already shown, are all outside of the province of the local tax authorities.

DISTRICT OF COLUMBIA

The gas lighting service in the District of Columbia is rendered by two corporations, styled, "The Washington Gas Light Company" and "The Georgetown Gas Light Company." The former was incorporated by an act approved July 8, 1848.¹ The later incorporated July 20, 1854.²

The price paid for lighting the public streets with gas is controlled by the appropriation law of March 3, 1905, which provides that not more than twenty dollars per annum shall be paid for each gas lamp with a flat flame burner adjusted to consume five cubic feet of gas per hour, and not more than twenty-six dollars per annum for lamps equipped with an incandescent mantle of not less than sixty candle power. This amount includes the entire cost of maintenance. The act further provides that the illuminating power of

¹ 9 Stats. at Large, 722. This charter was amended, see 10th Stats. at Large, pp. 734, 788, 835.

² 10th Stats., 786.

gas shall be equal to twenty-two candles. The average number of street gas lights is about seventy-five per mile. The commissioners are authorized to erect and maintain additional lights, if in their judgment it may be necessary. The charges for gas to private consumers are regulated by an act of Congress, entitled, "An act relating to the sale of gas in the District of Columbia," approved June 6, 1896.*

The electric light service is rendered by a private corporation entitled, "The Potomac Electric Power Company." The price charged by it for public service is fixed by act of Congress and is shown in the appropriation law for the fiscal year 1906, which provides that not more than eighty-five dollars per annum shall be paid for any electric arc light operated wholly by means of underground wire. The amount expended per annum for this purpose, including extensions of the service, must not exceed \$84,400. No part of this appropriation may be used for electric lighting by means of wires over the streets of the city of Washington. The average number of street electric arc lights is about thirty per mile. The street lighting by gas and electricity is generally satisfactory.

The method of assessing gas light and electric light companies for municipal taxes and the taxes derived therefrom are substantially as follows;

The Electric Lighting Companies.

The real estate and conduits, poles, lamps, etc., of such companies are taxed at the rate of $1\frac{1}{2}$ per centum per annum on the assessed valuation thereof.

These companies are required to make affidavit through their proper officers to the board of personal tax appraisers on or before the first day of August of each year as to the amount of their gross earnings for the preceding year ending June 30th, and to pay thereon to the collector of taxes 4 per centum.

The payments for the fiscal year 1905 are as follows:

Real estate	\$8,048.57
Personal	26,542.33

The Gas Light Companies.

The real estate and the mains, meters, pipes, etc., of such companies are taxed at the rate of $1\frac{1}{2}$ per centum per annum upon the assessed valuation thereof.

These companies are required to make affidavit through their proper officers to the board of personal tax appraisers on or before the first day of August of each year as to the amount of their gross earnings for the preceding year ending June 30th, and to pay thereon to the collector of taxes 5 per centum.

They are also required to take up, lay, and replace all gas mains on any street or avenue to be paved at such time and place as the District authorities

* 29th Stats. 251.

shall direct. The price of gas for both public and private use is regulated by Congress.

The payments for the fiscal year 1905 are as follows:

Real estate	\$24,469.98
Personal	80,977.63

NEWARK, N. J.

The Gas Service.

The gas service in the city of Newark is supplied by private enterprise. The first gas lighting company in the city was incorporated by an act of the legislature in 1845. This charter gave the gas company power to do all things necessary to light the city and the streets and alleys. In fact the gas company claims the right to open any street in the city without a permit. The charter was originally for twenty years, but later was extended to thirty years, and then finally made perpetual. The laws of the state require each company using public streets to pay into the state treasury 2 per cent. of the gross receipts. The state then apportions these gross receipts among the various taxing districts in proportion to the value of the public easement in each district. Ordinary real estate and personal taxes are levied upon the property of the company in the same manner as all other taxes are levied. The apportionment of the 2 per cent. state franchise tax for the city in the year 1904 amounted to \$17,949.59. There is no law of the state or ordinance of the city which fixes the price to be paid by consumers and the public generally for the use of gas. The city, however, has a contract with the gas company whereby it pays \$19.00 for each street lamp burning 4,000 hours per year with a four-foot burner. This contract runs for five years from March 1, 1903. The price paid by private parties generally for gas is \$1.10 per thousand cubic feet with a discount of ten cents if the bill is paid within five days after date. The public buildings of the city are charged at the rate of \$1.00 per thousand cubic feet with no discount or rebate. The gas company has never been required to give any free lights for the public service. The burners used on the lights are generally old fashioned—the gas lamp lights being used largely to supplement the electric light. There are few streets which are lighted solely by gas lamps; nearly all the street corners have electric lights. The total number of gas lamps in the city during 1904 was 2,136.

The Electric Light Service.

A number of electric light companies were organized in the city of Newark during the past twenty years. Their charters are of a general character and conform to the general laws of the state concerning corporations. The companies are required to obtain the consent of property owners before placing their poles in the front of such property. They are also required to

place their wires underground in subways constructed by themselves, but under supervision of the board of public works. The right to use the streets was unconditionally granted in perpetuity. No compensation for the use of the streets was paid to the city directly. However, a 2 per cent. franchise tax upon the gross receipts is paid to the state and is then apportioned by the state board of assessors in the same manner as the gas company's tax is apportioned. The amount received by the city of Newark from the electric companies of the 2 per cent. franchise tax during 1904 was \$11,359.36. There is no limitation in the city ordinances regulating the maximum price of light or power furnished. The standard price for light to private consumers is thirteen cents per Kilo-Watt hour with a sliding scale or discount according to the current used. The city pays for public lighting \$95.00 per year for 2,000-candle power arc lamps burning 4,000 hours. Incandescent lamps of 30-candle power are supplied for public lighting at \$17.00 each per year burning 4,000 hours. There are no free lights furnished for the public service. The city also pays ten cents per Kilo-Watt hour for all lighting current used in the public buildings.

PROVIDENCE

BY SIDNEY A. SHERMAN, Providence, R. I.

Gas and Electric Light System.

In Providence both the gas and electric light service are furnished by private enterprise. The Providence Gas Lighting Company has an exclusive franchise for twenty years from August 8, 1892. It must lay mains in new streets on ninety days' notice and keep those streets in repair for six months. It must maintain the quality of its gas at as high a standard as when the contract was made. There is no provision for testing the gas, and the city depends entirely upon the company for the keeping of the contract. After paying 8 per cent. dividends on capital, and making a "reasonable and prudent provision for carrying on its business," it must apply the balance of net earnings to a reduction of the price of gas.

There is no maximum price which may be charged, and there are no free lights for public service. Gas is almost out of use for street lighting, only \$24,000 being expended for it as against \$253,000 for electric lighting. The company pays taxes of about \$30,000 a year, besides the special franchise tax of 3 per cent. on gross earnings, which tax amounted to \$28,000 for the year ending June 30, 1904. The company has until recently been conservative in its financing. The United Gas Improvement Company interests being in the field to secure control, the Providence Gas Company applied to the general assembly last winter for power to increase its capital from \$3,000,000 to \$6,000,000. It was given power to raise it to \$5,000,000. Its stock sells in the market for \$101, par \$50.

A reduction in the price of gas from \$1.30 to \$1.20 was made in 1894, and from \$1.20 to \$1.10 in 1896. There has been no reduction since, despite the fact that the receipts increased 38 per cent. in the five years from 1898 to 1903, but, following on the recent inquiry of a city committee as to quality and pressure of gas, a reduction to \$1.05 for prompt payment of bills was made in 1904. The city has no control over the accounts of the company, nor even over the quality of gas. There has come to light no attempt to evade the franchise provisions, and there is no temptation to evade them—they leave the company free. The city has no right of purchase. The present company is the result of some consolidation about fifteen years ago. It bought out its rivals.

Electric Lighting.—The "Act Concerning the Narragansett Electric Lighting Company," passed by the general assembly in January, 1892, gave that company an exclusive franchise of twenty years from July 1, 1892, in the city of Providence. Under authority of that act a contract was made by which the company was to furnish the city 2,000-candle-power lamps, with 10 amperes of current, under an E. M. F. of 45 volts each. The lights were to burn all night and every night. If the cost of light should be cheapened by any new invention the price was to be lowered accordingly. On the other hand, if the city ordered the wires placed underground, the interest on the cost was to be added to the price. There is no provision as to maximum charge, nor are there any free lights. The city pays for about 2,000 lights. The company pays taxes of about \$20,000 a year, besides a special franchise tax of 5 per cent. on gross earnings, which tax amounted to \$36,899 for the year ending June 30, 1904.

Providence is probably the best lighted city in the United States, having approximately 2,000 lights in 238 miles of street. According to the *Bulletin of the Department of Labor* for September, 1901, page 955, Providence pays \$1.71 per capita for street lighting, a sum far in excess of that paid by any other city in the United States, with the single exception of Rochester, N. Y. The capital stock authorized is \$7,000,000; outstanding, \$3,000,000. The company has issued bonds to the amount of \$1,000,000. The stock pays 8 per cent. dividends, and sells at \$100, par \$50. Up to 1897 the price of the public arc lights was \$140.52; from 1897 to 1900 it was \$127.75; from 1900 to 1903, \$118.03; and from 1903 to 1906 it has been \$109.50. These prices are exorbitant, and amount to a bonus to the company of \$75,000 to \$1,000,000 a year. The scheduled charge for private lighting (incandescent) is one cent per hour for a 16-candle-power lamp. There are discounts for large buyers, and complaints are made that the discount is variable and that each buyer must make his own bargain with the company. It is impossible to verify this. The city has no control over the accounts of the company.

In the legislative act it is provided that the city may establish a municipal plant, for public purposes only, on a majority vote of all those elected to each branch of the council, not less than four months before any annual election, and its ratification by a majority of the property voters (we do not have universal suffrage in Rhode Island cities) at that election. Failure bars another attempt for three years. Such a resolution was assured a majority

in the common council in 1896, but lacked one vote in the board of aldermen, and therefore failed to get to the voters. A similar resolution was introduced in the council in June of this year and referred to the committee on lighting, which failed to report, and the time has now passed when it could be voted on in November, even if the council should refer it to the electors.

ST. PAUL

The Gas Service.

Public and private lighting in this city is done by private agencies. All the gas and electric concerns are embodied in the existing grantee, the St. Paul Light Company. This company is required to give good and constant service to the city and all the inhabitants and to furnish, without discrimination, gas or electric current to all persons along its mains and lines. The company pays a tax on real estate and personal property and also 5 per cent. annually of the gross earnings. The maximum price for gas to January, 1905, is fixed at \$1.15 per thousand cubic feet; thereafter, until January 1, 1907, to diminish at the rate of five cents per year, and thereafter during the continuance of the existing franchise not to exceed \$1.00 per thousand cubic feet for private use. For public use to light the city streets, public grounds and buildings, the price shall never exceed \$1.00 per thousand cubic feet of gas actually used. The price charged per lamp per hour for public lamps is \$26.25. There are in all 2,920 lamps, none of which are free.

The Electric Light Service.

In the case of the electric light service the grantee is required to place electric wires on any street within six months after they are ordered to do so by the common council. The grantee is also required to furnish an ample supply for power purposes to persons desiring to use the same, within six months after being so ordered by the council, provided the petitioner agrees to pay for an amount of power equal to or not less than two horse-power per day for one year. The company pays real and personal property taxes, and 5 per cent. of the gross earnings to the city as in the case of the gas service. No maximum price for current is fixed. The city, however, pays from \$90 to \$100 per arc lamp per year. There are no lights supplied free of charge.

GRAND RAPIDS

By DELOS F. WILCOX, Grand Rapids, Mich.

The Gas Service.

There is no public gas plant in this city. Gas is furnished by the Grand Rapids Gas Light Company under a franchise granted May 5, 1890, for a period of thirty years. There is no provision for public lighting and no

limitation as to the price to be charged for gas except that it may not exceed the price charged at the time the franchise was granted. As a matter of fact, however, the price has been voluntarily reduced so that gas is now furnished at \$1.10 per thousand cubic feet with twenty cents discount, if bills are paid before the fifteenth of the following month. The same price is charged whether the gas is used for illuminating or for fuel purposes. The only payment made by the company to the city treasury is in the form of regular taxes. The company is taxed on a valuation of \$1,885,850. Last year the company paid \$28,522.39 in taxes. The city has no control over the accounts of the company and has no right reserved in the franchise to purchase the plant.

The present gas company has a monopoly of gas lighting and there has never been any competition. There is little complaint of evasion of franchise conditions because there are practically no conditions in the franchise ordinance except with reference to the opening of streets and the laying of pipes. However, there has been a great deal of complaint about poor quality of gas, together with varying pressure. It is understood that many of the gas mains are too small for the increasing service, so that extraordinary pressure is required in the downtown district in order to get any at all for the remote service. The city authorities are now considering the passage of an ordinance providing for the testing of gas and the regulation of pressure. Under the new city charter, which goes into effect September 1st, the city will have much greater authority in this matter than it now has.

The Electric Lighting.

Private Plant.—All private electric lighting is done by the Grand Rapids Edison Company, which is operating under a franchise granted September 6, 1893, for a period of thirty years. The Edison Company now owns three franchises which were originally granted to different parties. Consolidation was effected several years ago and now there is no competition in commercial lighting although the council has, within the past two years, granted two other electric lighting franchises for twenty-year periods. Neither of these has as yet been used and the indications are that one at least will be forfeited. The Edison Company franchises contain no requirement as to prices or character of service. The only limitations are with reference to the opening of streets, the stringing of wires and the laying of conduits. There is no provision for public lighting. The municipal lighting plant takes care of all street lighting and plans are now on foot to extend the system to enable the city to light its own public buildings. At present the public buildings are lighted by gas or electricity at the same rates as private establishments. There are no free lights provided for, and there is no payment into the public treasury except taxes upon an assessed valuation of \$830,675 which amounts to approximately \$14,000 a year. The company is capitalized at \$1,641,250, of which \$198,750 is preferred stock and \$602,500 common stock, the bonds outstanding amounting to \$850,000. For the year 1904, the gross earnings are given as \$218,015.18 and the operating expenses as \$123,271.05, leaving \$94,-

744.13 as the net earnings for the year. Out of this \$42,000 was charged to interest. This left \$52,744.13 to be devoted to dividends and reserve. The prices are as follows:

Incandescent Lighting.—For first thirty hours' use of maximum connected load, 12 cents per thousand Watts; for second thirty hours' use, 8 cents per thousand Watts; for all further use, 6 cents per thousand Watts.

Arc Lighting.—For first thirty hours' use, connected load, 10 cents per thousand Watts; for second thirty hours' use, 8 cents per thousand Watts; for all further use, 6 cents per thousand Watts.

Power.—For first thirty hours' use of connected load, 4 cents per horse-power hour; for second thirty hours' use, 3 cents per horse-power hour; for all further use, 2½ cents per horse-power hour.

A discount of 10 per cent. is allowed from these prices, if bills are paid within ten days.

The city has no control whatever of the accounts of the company and has no right reserved in the franchise to purchase the plant. There is little or no complaint of evasion or franchise conditions, as there are none of importance to be evaded.

Public Plant.—A municipal electric lighting plant was established six years ago. The total original cost of the plant was \$186,253.81, \$125,000 of which was provided by the issue of bonds. The construction to date, including extensions, has cost something over \$200,000. The lighting plant is under the control of the board of public works, appointed by the mayor. There are no civil service rules whatever in that department or any other department of the city government. Recently, however, the board of public works, which has control not only of the lighting plant but also of the water works, repair shops, street construction, bridges and several public buildings, has appointed a general manager to have control of these departments. Mr. Samuel A. Freshney, the gentleman appointed, will receive a salary of \$4,000 a year. The municipal lighting plant does not enter into the commercial field at all. The funds for its expenses are provided from the annual budget. The total expenses for maintenance and operation are about \$30,000 a year. The board of public works figures that the public lighting is furnished at an average cost for operation only of about \$45 per lamp, the average number of lamps being something over 600. When the streets were lighted by contract, the cost per lamp was about \$100 a year. It would be unfair, however, to claim the difference between these prices as net profit, for in the present cost of operation as figured by the city no allowance is made for depreciation, taxes, interest, etc. Nevertheless, the city is well satisfied with its electric lighting plant and now has plans under consideration for extending the service so as to provide for lighting of the city hall, public library, police headquarters and the engine houses from the city plant.

SEATTLE

By PROFESSOR J. ALLEN SMITH, University of Washington, Seattle.

The gas supply of Seattle a few years ago was controlled by a corporation operating under a perpetual franchise. A new company entered the

field in 1901, securing a fifty-year franchise by offering cheaper gas and holding out the prospect of competition in the business. As should have been expected, however, competition was short-lived, the old company soon being absorbed by the new.

Under the charter of the new company the maximum price allowed is \$1.50 per thousand feet for light and \$1.25 for fuel. The company, however, has voluntarily reduced the price to \$1.00 for all purposes and is rapidly extending its mains into every part of the city. At the expiration of its franchise the city has the right to purchase its works at an appraised valuation.

Electric lighting is controlled mainly by two private companies—the Seattle Electric Company and the Seattle-Tacoma Power Company, the former having a plant of 20,000 horse-power at Electron and the latter one of 18,000 at Snoqualmie. The city also has a plant of 6,000 horse-power which could, by the expenditure of perhaps \$1,500,000, be increased to 35,000 horse-power.

The fifty-year franchise under which the Seattle Electric Company supplies light and power to private consumers was granted in 1902. The plant which this company owns, though erected primarily to furnish the power to operate its street car system, supplies the greater part of the light and power consumed by private users. The Seattle-Tacoma Power Company is operating under a thirty-six-year franchise granted in 1903.

The municipal authorities exercise no control over the accounts of the lighting companies and, aside from ordinary taxes, no money payments are required. In the case of the electric light franchise owned by the Seattle Electric Company, however, the company is required to put its wires under ground in a certain designated part of the city which may be described as the downtown business district, and in this same district it is also required to construct conduits which the city may use free of charge for its municipal police and fire alarm wires and its wires for lighting public places and municipal buildings. The city also reserves the right to lay down in the trenches opened by the company such conduits as it may elect to build at its own expense. In the case of the Seattle-Tacoma Power Company the city may require its wires to be put under ground. The franchise of the latter company fixes a maximum of twelve cents per Kilo-Watt hour for light, and six cents for power. The franchise of the other company, however, contains no restriction on the price which may be charged.

The streets and public buildings belonging to the city are all lighted now by the recently constructed municipal plant. When the bonds were voted for the construction of this plant it was generally understood that it was to furnish light and power for all purposes. Every effort has been made, however, by the private corporations engaged in this line of business to prevent the city from supplying light and power to private consumers. But in spite of this opposition the sale of bonds was recently authorized by an overwhelming popular vote to erect poles and wires for the purpose of distributing light and power for private consumers. It is not yet conceded, however, by the opponents of municipal lighting that the city is to become an active competitor of the private lighting companies. It is now contended in the interest of the private corporations that the purpose of the distributing system which

the city is about to construct is not to supply light and power for commercial use, but to prevent the private companies from charging the consumer an excessive price. This view of the matter might temporarily influence our municipal authorities, but the voters of the city want cheap light and power and will have little patience with the cry of vested rights raised for the purpose of protecting the profits of the highly capitalized private corporations.

It is generally believed here that the price charged for electric light by the private companies is unreasonably high and that the system under which the companies give a rating to each consumer affords an opportunity for discrimination. The chief demand, however, is for cheaper light, and the people will not be satisfied until the municipal plant is used for the purpose of reducing the price of light and power to private consumers. The city has an abundance of cheap power in connection with its Cedar River water supply which could be used to furnish light and power for general consumption. In this respect, however, the city has no advantage over the private companies, but the sentiment here is strongly in favor of municipal ownership and the people believe that the price charged for light, whether furnished by a private corporation or by the city, ought not to exceed the price at which the latter could afford to supply it.

DULUTH

By W. G. JOERNS, ESQ., Duluth, Minn.

The Gas Service.

(a) Originally the gas service in Duluth (in conjunction with the water service) was performed by a private company.

This private company, under the name of the Duluth Gas and Water Company, in October, 1883, obtained from the then village of Duluth what on its face was an exclusive franchise to furnish the municipality and its inhabitants with water and gas. The franchise, by its terms, was to run for thirty years and, under stated conditions, was open to renewal for twenty years longer.

Aside from the stated charge of \$28 per annum per lamp for a minimum number of street lamps, the company was authorized to charge the general consumer at the rate of \$2.50 per thousand cubic feet when used for illuminating and \$2.00 per thousand when used for fuel purposes, the respective consumption being registered in separate meters. The average standard of illuminating gas was fixed at "not less than twenty standard candles." Other franchises for water and light were later granted to private companies in outlying subdivisions that subsequently became part and parcel of the city of Duluth; but they were more or less related to the parent company and for the purposes of this communication the history of the parent company may in the main be taken as also the history of the subsidiary companies.

The private company continued in the exercise of its franchise rights until the year 1898, when, after a shameful record of venality, incompetency

and inadequate and discriminating service, its rights and possessions were transferred to the municipality. Since about August, 1898, the gas (and water) plant has been operated by the city.

At the time of this transfer the company had ceased to do any street lighting, but was furnishing gas for interior lighting and for domestic purposes to the amount of about 20,000,000 cubic feet per annum, through twenty-nine miles of mains and 1,111 meters, at the rate of \$1.90 net per thousand for illuminating and \$1.00 net per thousand for fuel purposes. Under municipal management the consumption was rapidly augmented to, in round numbers, 25,000,000 in 1899 32,000,000 in 1900, 39,000,000 in 1901, 49,000,000 in 1902, 72,000,000 in 1903 until in 1904 the consumption reached 85,862,800 feet. The 1904 product was delivered through forty-eight miles of mains and 3,300 meters at the net rate of ninety cents per thousand for all purposes from January to July and from July 1st on at the net rate of *ninety cents for illuminating and seventy-five cents for purposes of use other than light.*

The consumption has increased during the first half of the present year something over 22 per cent., and stands on the basis of an annual consumption of 105,000,000 feet. The total for the year, however, is expected to substantially exceed this amount. The price remains the same as in the latter half of 1904.

In making comparisons the accepted fact should be borne in mind that, under proper management and normal conditions of production and distribution, as the consumption increases the cost of production and distribution should relatively decrease, or nearly so, and that the cost to the consumer should be proportionately reduced. It should also be remembered that on account of topography, large amount and difficult nature of rock work, extent of territory and scattered consumption and perhaps for other reasons Duluth is a more costly territory to serve than the average. Indeed, a prominent New York technical journal stated about three years ago, upon due investigation and comparison, that, owing to these fundamental difficulties, the "cost of construction" in Duluth, in proportion to number served and quantity output, was "*unparalleled.*" Nevertheless, the favorable basis of charge, as stated, has been arrived at under municipal management.

The present rate was reached by gradual reduction. In 1898, both with the company and the city, the rates averaged \$1.52³/₄ per thousand. The plant was then far from self-sustaining. In 1899 the rates were reduced to net \$1.30¹/₂ per thousand. Notwithstanding substantial improvements in management and economies in both production and distribution the operation still showed a deficit, the aggregate cost per thousand for the year being \$1.53. By the very next year, however, the effects of the broader municipal policy and better management began to show themselves and, though the average earnings per thousand were still further reduced to \$1.24³/₄, the cost was reduced to \$1.26¹/₃ and the deficit to less than \$700 for the year. By 1902 the earnings (rates) had been reduced to \$1.11⁸/₂₀ and the cost to \$1.07¹/₂, the works thus earning for the year a net SURPLUS of a trifle over \$1,800. In 1903 the earnings (rates) were still further reduced to \$1.02⁹/₁₀ and the cost to \$0.95⁴/₅ and the surplus for the year was over \$5,000. In 1904 the net rates

were still further reduced to the average of $\$0.89\frac{1}{4}$, the department so far having followed the plan of absorbing anticipated profits, as near as may be, in reduction of rates, but the surplus for the year was still about \$1,500. In the current year, the rate remaining as established in the latter half of 1904, the average rate for the year is estimated at about $\$0.87\frac{1}{2}$ and the year's surplus at \$25,00, or perhaps even in excess of that amount.¹

The substantial saving to the consumers, thus demonstrated, has been still further supplemented by reductions in the price of service extensions, stoves, lamps, etc., which, under the municipal policy, are furnished by the water and light department of the city at a slight margin above cost, enough to protect the city against any possibility of loss, but still at a material reduction from the standard set by private enterprise.

The gas and water plants of the city came into its possession together and have been, more or less, the subject of joint operation. The two plants were purchased by the city for \$1,250,000. This was practically \$1,000,000 less than the price at which it was originally aimed and schemed to unload them upon the city, but was still in excess of the conservatively estimated actual value thereof by several hundred thousand dollars. It was a compromise figure in which the people of Duluth acquiesced in order to get rid of the private management which had become a virulent public ulcer. The city had already begun the building of an independent, so-called "supplemental," system for the purpose of securing and safe-guarding an "unfailing supply of pure and wholesome water" for which was expended upwards of \$1,000,000 and the annual interest charge increased by some \$50,000. There have also been expended by the city since the purchase of the plants in new construction and extensions (including work now in progress) between \$500,000 and \$600,000. For all such capital expenditures, except the sum of \$91,000 contributed thereto out of the surplus earnings of the plants, the "water and light" bonds of the city have been issued to the now sum total of \$2,746,000. Of this bonded indebtedness \$483,000 was at the beginning of the present year charged to the gas plant. To this amount are to be added some \$25,000 more that are provided for in above bond total and are now being expended in gas extensions. It is only proper to add that an additional \$20,000 (over and above the \$91,000 heretofore mentioned) of the surplus earnings of the water and light department have been appropriated and are now being expended in water and gas extensions.

During the six and a half years of municipal operation (to January 1st of the present year) the city has paid \$331,500 as the aggregate of interest on the bonds covering the "supplemental" system for securing and safeguarding a pure water supply. This was a charge that the private company during its operation did not have to meet. Nevertheless, under municipal management, there has been accumulated (to January 1, 1905,) a *surplus* of \$112,000, of which \$91,000 have heretofore and \$20,000 are being now expended in additions to the plants and are properly classed as "investments in construction" for which otherwise it would have been necessary to issue additional bonds of the city; and there has been saved to the consumers, besides, the sub-

¹ Above fractions of a cent are approximately only.

stantial aggregate of not less than \$375,000, \$25,000 of which came in reductions on service extensions, meters, lamps, etc., and the balance from reductions in the water and gas rates during the period named. Extensions, also, are now made on a guarantee, *from the immediate consumer*, of an annual income of twelve cents per lineal foot (being 8 per cent. on the average estimated cost), whereas in the case of the private company, by manipulation of the authorities, a guarantee *by the city* had been brought about of an annual income to the company of fifty cents per lineal foot, to the illegitimate cost to the city of thousands of dollars. In addition a corrupting political influence has all but been removed, the patrons have enjoyed an impartial and absolutely first-class service in every respect and the benefits from the economies of increased production and improved processes will flow into their pockets instead of being diverted into those of a more or less exploiting syndicate for gain. The only offset to this wonderful credit is the amount of the taxes the private company would have paid to the city had the plants remained in private hands. The aggregate of this offset for the six and a half years in question has been computed at \$105,000 (a figure that, I believe, is undisputed) and is barely a fifth of the actual cash savings, to say nothing of the assured pure water supply, better service and the other benefits mentioned.

In their operation of the water and gas plants the water and light board have followed the plan of charging to construction and hence to capital account:

1. The original cost to the city of the several plants.
2. All new work, material and appliances not heretofore part of the plants, the same being additions and not replacements.
3. All replacements of parts of the plants in worn out condition **when** taken over by the city, with pro-rata charge only for partial depreciation at that time.

All other replacements, in fact many that might properly have gone to construction, have been charged to *operation and maintenance*, the policy and practice of the board having at all times been a broad and liberal one in the direction of keeping the plants in a high state of efficiency out of the earnings thereof with as little encroachment as consistently possible on the capital account. This capital account, except as to the \$91,000 of savings (water and gas) invested in construction prior to January 1, 1905, and the \$20,000 now being expended in extensions, as stated, is represented by the "water and light" bonds issued by the city as heretofore set out.

Inasmuch as, under the policy of the board, the plants have been maintained in a state of full efficiency and, as to the part taken over from the private company, in fact improved since the city took charge thereof, no annual sum or percentage has, in the bookkeeping of the department, as yet been charged off for depreciation. Neither has any sinking fund provision been made to date and this for the reason that, except as the accumulated surplus has been devoted to construction, the policy heretofore has been to absorb, as much as possible, any anticipated surplus in the reduction of rates. Now that rates, in their reduction by practically one-half, have been brought down to a living basis for the consumer, it is among the mooted possibilities that a sinking fund will be established in the near future.

(b) The present price of gas, namely, ninety cents for illuminating purposes and seventy-five cents for other than light, was arrived at under municipal production and distribution. It is the full and fair product of municipal management, and, under well-known rules, meant the continued reduction in the cost of production and distribution as the consumption increased.

In August, 1904, however, the city was prevailed upon, still controlling absolutely the distribution, to enter into a ten-year contract to purchase its gas supply from a newly established local private coking plant which had the gas on hand as a by-product and which, in this way, the people of Duluth sought to aid and stimulate as a new, important and growing industry. The basis of charge, on a sliding scale, was just what the city had demonstrated it could produce the gas for with its own generator, with such future reductions as it was calculated the city could effectuate under stated increased stages of production. The water gas, therefore, furnished by the city was of practically twenty-two-candle power and of 650 heat units. The coal gas now supplied to the city, under the arrangement stated, is only from eighteen to nineteen-candle power but of 700 heat units. The new product is thus less in illuminating power but greater in fuel capacity.

There are those who earnestly regret even this departure from absolutely exclusive municipal production and control, even though apparently safeguarded by rigid contract provisions, and fear that it may pave the way for that undermining of the public enterprise by the private selfish interest which unfortunately has become more or less historic; but the assumed general economic benefits to the community from the special arrangement were pictured in such favorable light that active opposition was practically eliminated. The ultimate wisdom of the step remains, of course, a matter of future determination.

(c) *Management*.—This essential in Duluth is met by several important and more or less unique requirements and has been safe-guarded with much care in the "home rule" charter of the city.

The important features that have made for success in the municipal operation of the water and gas plants in Duluth may briefly be summarized as follows:

1. Absolute divorce from politics, in theory as well as practice.
2. Business management.
3. Charter safe-guards against mismanagement within and against encroachments and attacks for private gain from without, including the barter and sale or other disposition of the public plants.
4. Intelligent public spirit of the people of Duluth.

The management of all public utilities, owned and operated by the city, is by charter provision vested in the so-called board of water and light commissioners. This board is composed of five members who are appointed by the mayor of the city, *one in each year* (except, of course, in case of vacancy), hold office for *five years* and serve without pay. The personnel of the board has from the start been of the highest order. This board employs and fixes the compensation of a general manager or managers and such other officials and subordinates as may be necessary to carry out the purposes of the depart-

ment. It also has absolute and uncontrolled management of the public service utilities committed to its care, including the right of contract and of the purchase and sale of supplies, etc., except as its powers may be restricted by the following provisions:

a. Contracts involving an expenditure of more than \$300, whether for material or construction (except in cases of emergency) must be in writing and in duplicate, one copy thereof being filed with the city comptroller who is also the comptroller of the board.

b. All funds on hand, in excess of \$200, shall daily be deposited in the city treasury, the city treasurer also acting as the treasurer of the board.

c. Extensions when ordered by the board can only be made upon approval by resolution of the common council.

d. Water and light bonds can only be issued by the city when authorized by the common council and approved by popular vote.

e. The board must make monthly report of its receipts and expenditures and semi-annual general reports to the common council and its vouchers must be countersigned by the city comptroller.

f. The president of the board is by virtue of his office a member of the "city conference committee," which exercises a general supervision over the affairs and expenditures of the city and its several departments, and must report to such committee in writing, for its use and for the use of the common council of the city, at the first yearly meeting and at each monthly meeting thereafter:

First. The amount of contracts let and of purchases made for material and supplies.

Second. The amount of expenses incurred for labor.

Third. The amount of expenses incurred and contracts made for all other purposes and a synopsis of any contract calling for the payment of money (except bonds).

Fourth. The amount of moneys collected by the board from time to time.

Fifth. The number of employees at the date of the report, working on a fixed salary, in the service of the board and the monthly or annual salary of each.

g. The general civil service provisions of the city have a limited application to the employees of the department.

h. The general charter provisions governing misconduct and removal from office of public officials also apply to the members of the board and its subordinates.

The Electric Light Service.

i. The electric lighting in Duluth (excepting in the unimportant suburb of New Duluth, Fond du Lac, where it is done in a small way is at present furnished by a company called the Duluth General Electric Company. This company, by purchase, absorption and reorganization, is the successor of numerous prior companies that had obtained franchises in the past—in part from the city proper and in part from separate suburban political divisions that later became a part of the city. These franchises have

either expired by limitation or, by their express terms or inherent defects, are now revocable at the pleasure of the city.

The stipulations for rates also, where such are in terms other than that they should be *reasonable*, are now of no practical effect; for the charges of the company have been more or less determined by the competition of the *municipal gas plant* and, so far as public lighting is concerned, by contract provision which the exigency of threatened municipal invasion of the electric lighting field wrung from the private enterprise and the continued danger of municipal activity is likely to maintain.

Under the provisions of Duluth's "home-rule" charter, public service corporations exercising franchises in the city must file with the city comptroller annual sworn statements as to value of plant, indebtedness, capital stock, earnings, expenses, etc. From that of the Duluth General Electric Company filed to cover the year ending December 31, 1904, it appears that (in pursuance of receivership proceedings as to its immediate predecessor, foreclosure and reorganization) the company paid for its property in its own bonds and stock as follows:

Bonds	\$1,175,000
Stock	117,000

and expended in construction since the time of such purchase the sum of \$137,660.47, thus making the total alleged cost to the company on December 31, 1904, \$1,429,660.47.

The bonds outstanding are given, as:

First mortgage bonds	\$596,000
Income bonds	625,000

Total bonds	\$1,221,000
The stock (as above)	117,000

Total outstanding capitalization	\$1,338,000
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The earnings for 1904 were given as follows:

City of Duluth (public lighting)	\$23,678.48
General consumers	168,708.16
Power	24,406.17
Miscellaneous	6,799.14
	<hr/> \$223,591.95

The expenses:

Taxes paid	\$5,646.06
Interest paid	66,560.00
Maintenance and operation	106,380.35
Depreciation of plant at 3 per cent.	42,889.81
Net income	2,115.73
	<hr/> \$223,591.95

It has been publicly charged that the issue of "first mortgage bonds" aforesaid more than represents the actual present cash value of the plant. There is substantial reason to believe that this claim is well-founded. If so, the company is grossly over-capitalized and the charge, in its method of book-keeping as developed by its report, of 3 per cent. on \$1,429,660.47, or \$42,889.81, for depreciation of plant is vastly in excess of the proper figures. It likewise follows that, under such revised estimate, its earnings would be grossly excessive notwithstanding the acknowledged low rate at which, as we shall see, the public lighting is provided for by contract with the city.

This public lighting contract with the city was made on April 29, 1901, by the immediate predecessor of the present company, and covered a period of five years from August 1, 1901, with right of renewal for another five year period at option of the city.

Under this contract the company agreed to furnish *arc* lights of the so-called "series alternating system of enclosed lamps of practically 6½ amperes and 70 volts rating," all night service, at \$55.00 per annum; also bunches of *incandescent* lights for street lighting (two lights of 16 c. p. each to the bunch) at \$18.00 each per annum. It was stipulated that the city should use and pay for a minimum of 300 arc lamps (a number then already exceeded) and it was provided that arc lamps should not be over 1,000 feet apart and incandescent clusters 400 feet.

In addition the company was obliged to furnish *free of charge*:

1. One arc light for each public park;

2. Lights for City Hall;

3. Twenty-five incandescent lamps of 16 c. p. each in police headquarters.

All other incandescent lights used in the public buildings of the city were further to be furnished at the rate of 7 cents per Kilo-Watt hour or 40 cents per month for each 16 c. p. light. The city also reserved the right to use the poles, etc., of the company for fire alarm, telephone and other municipal service *free of charge*. Under this contract there were in use in the city on December 31, 1904 (last official report), 395 arc and 225 incandescent lights.

The contract in question was urged upon the city notwithstanding the company then held the city's three year contract (from August 1, 1900), *with two years yet to run*, at \$70.00 per lamp per year and no obligation as to incandescent lights whatever. The 1900 contract had, on its part, been a modified renewal of an expired earlier contract providing for the payment of approximately \$100 per arc lamp per annum.

The reason for both the reduction to \$70 and the later one to \$55 is to be found in the public agitation for a municipal electric lighting plant. Indeed, when the \$55 contract was thrust upon the city the people had already regularly voted a bond issue for a public lighting plant. This was immediately prior to the adoption of the city's "home rule" charter and meant that, notwithstanding the specious legislative inhibition intended to prevent just this consummation of the popular desire, the way was open for the construction by the municipality of an electric lighting plant for *public* lighting, which, once constructed, could be added to indefinitely and ultimately made to include the *commercial* lighting field as well. The admittedly low charge for public light-

ing, under the contract referred to, was, however, diligently and effectively used as an argument why the city should not engage in the "electric lighting business" (notwithstanding the brilliant success of the municipal gas plant) and served as an excuse to hypnotized and misguided public servants to disregard the mandate of the people until the bonds they had voted had, through lapse of time, become useless for their intended purpose.

The cost, to the consumer, of private or so-called "commercial" lighting is more difficult of determination. It is not the result of contract or of franchise provision but of a practical condition brought about by the competition, as far as it can apply, of the municipal gas plant in the lighting field. That the charges are discriminatory as between one customer and another is not fairly open to question. This discrimination is exercised in behalf of favorites, public officials and others where, in one way or another, there is an expectation of a *quid pro quo*; but it has been as one of the features of the war on the city gas plant that the most substantial concessions have been made or held out to the captured or coveted consumers of light. In a field in its nature open to more or less uncertainty at best, it is thus doubly difficult to arrive at an accurate estimate of the basis of charge for private (commercial) lighting. Some six or eight months ago the question of relative charge was reported upon by a committee of a public organization in the city, confessedly upon data furnished exclusively by the special interest in question, to the effect that the maximum rate for private lighting in Duluth was 13.5 cents (15 cents less 10 per cent. for cash discount) per Kilo-Watt hour as against an average maximum of 14.48 cents in cities of the United States of 40,000 population and over—according to the "confidential report of the National Electric Light Association for 1903."

The occasion for the report was an attempt on the part of the electric lighting company to commit the city to a premature renewal of the public lighting contract for another term of years, the present contract, at that time, having still almost two years to run; while the animus for the move was clearly to be found in a renewed agitation for a municipal electric lighting plant and the expressed determination to apply to the state legislature, then shortly to convene, for such legislative enactment as would pave the way for action by the municipality if later a plebiscite in Duluth should so determine.

The contract in question was not renewed at that time nor has the question as yet been again revived. The enabling legislation that the municipality sought through its governing body, for which there was a strong popular local demand and which was considered a vital prerequisite to either the purchase or construction of an electric lighting plant by the municipality, also failed of enactment. Notwithstanding at least the nominal support of an apparently unanimous local legislative delegation, these mysterious influences carried the day and the popular will for the time being was defeated. As a palliative the private company, through a member of the local legislative delegation who acted as its spokesman, offered to renew its public lighting contract with the city for another five or ten **year** period "at the same rate or less than is paid at present" and, "not later than the expiration of the present

A study of the forty-five State Constitutions from the standpoint of restrictions placed by them upon State and Municipal affairs; the State authorities were left, for the most part, quite free in their organization of local government. By the middle of the nineteenth century the position to take advantage of constitutional revisions in order to curb this freedom. The movement in this direction has been seen in Delaware, Louisiana, New Hampshire, New York, Minnesota, South Carolina, Utah and Virginia, which have substantially revised their constitutions in the last decade, all but one have incorporated in the new documents numerous important limitations upon the power of the State authorities in relation to municipal affairs.

The appended table, which is intended to indicate by specific article and section, every restriction in every State Constitution, shows some of the important features which it discloses may be summarized as follows:

1. There is an utter lack of uniformity among the various State Constitutions as to the limitations placed upon State and Municipal problems.
2. The New England States show some approximation to uniformity in their comparative paucity of such limitations. In their Constitution whatever, while the whole six New England States put together have fewer limitations than some of the Southern States.
3. As regards the other sections of the Union no marked tendency to uniformity is displayed among States geographically separated. In its present Constitution, while Indiana, a neighboring State, has very few. South Carolina, again, has many, and Texas, again, has many.
4. In general, constitutional restrictions have increased decade by decade and, for the most part, are now most numerous in the latest State Constitutions. To this there is, however, one striking exception in the case of New Hampshire which revised its Constitution in 1793, and cut in its Constitution of nearly ninety years ago.
5. The importance of the problem of city government in the United States is reflected unmistakably in the growing attention given to it in the State Constitutions.

PROVISIONS IN THE SEVERAL STATE CONSTITUTIONS RELATING TO CITIES OR TOWNS

Present Constitution Adopted In	How Chartered A-Special Act. B-No Special Act. C-General Laws. D-Consent of the Electors Is Necessary for Incorporation. E-Cities May Frame their Own Charters.	Provisions Regarding Debts.	Contract of Debt Must Be Authorized by the Electors.	Provisions Regarding Lending of Credit, Etc.	Regulation of the Taxing Power of Cities. A-As to Betterment Taxes.	Provisions Applying to City Officials, Etc.	Limitation of the Power of the State Over Cities. A-As to Franchises. B-As to Local Taxes. C-As to Assumption of City Debt.	Provisions regarding Special Acts.	A-Legislature shall Provide for the Organization of City Government. B-The Organization of City Government.
Alabama 1901	IV 104(B) XII 229(C)	IV 104 XII 222 XII 225	XII 222	IV 94	XI 216 XII 223(A)		XII 220(A)		
Arkansas 1874	XII 2(B) XII 3(C)	XVI 1		XII 5 XVI 1	XII 4		XII 12(C)	V 25	XII 3(A)
California 1879	XI 6(B C) XI 8(B)	XI 18	XI 18	IV 31		IV 21 + 32 IV 25 XI 9	XI 12(B)	IV 25	
Colorado 1876	XIV 13(C) XV 2(A)	XI 8	XI 8	XI 1 + 2	VIII 8	XII 3 XIV 12	XV 11(A)	XV 2 V 25	
Connecticut ... 1818	X 3			XXV (1877)		XXIV (1877)			
Delaware 1897	IX A			VIII 8			VIII 4(C)		
Florida 1885	VIII 8 Am. 1900(B)			IX 10	IX 5	III 20			III 24(A)
Georgia 1877		VII 7 VII 10	VII 7	VII 6			VII 8 (C)		
Idaho 1889	XII 1(C) XI 2 III 19(B)	VIII 3 XII 4		VIII 4 XII 4		III 19	XI 11(A) XII 3(C)		
Illinois 1870	IV 22(B) XI 1(B C)	IX 12			IX 9(A) IX 10	IX 11	IV 20(C) IX 10(B) XI 4(A)	IV 22	
Indiana 1851	XI 1 (B C)	XIII 1					X 6(C)		
Iowa 1857	III 30(B) VIII 1(C)	XI 3		VIII 4				III 30	
Kansas 1859	XII 1(B C) XII 5(C)								XII 5(A)
Kentucky 1891	Sec. 59(B) Sec. 150(C)	Sec. 158 Sec. 159	Sec. 157	Sec. 179	Sec. 157 Sec. 181 Am. 1903	Sec. 161 Sec. 167	Sec. 163(A) Sec. 176(C) Sec. 181(B)	Sec. 59 Sec. 156	Sec. 160
Louisiana 1898	Art. 48(B)	Art. 281 Art. 270	Art. 281	Art. 58	Art. 224 Art. 229 Art. 232 Art. 233 Art. 243 Art. 270	Art. 210	Art. 48(A)	Art. 49	
Maine 1820	IV Part 3 Sec. 14(A)	XXII				IV Part 1 Sec. 5		IV Part 3 Sec. 13	
Maryland 1867	III 48(A)				III 58			III 33	
Massachusetts . 1820	Am. II (D)								

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point of restrictions placed by them upon State and Municipal authorities in relation to city affairs, reveals very plainly the increase the number of such restrictions. The early State Constitutions contained very few provisions relating to municipal in their organization of local government. By the middle of the nineteenth century, however, one may mark a growing disturbance this freedom. The movement in this direction has evidently strengthened apace, and of the nine States, Alabama, Carolina, Utah and Virginia, which have substantially revised their old Constitutions, or adopted new ones, during the last important limitations upon the power of the State authorities in relation to city charters and upon the powers of municipal

each article and section, every restriction in every State Constitution relating to cities or their affairs will furnish food for study. and as follows:

State Constitutions as to the limitations placed upon State and municipal authorities in their respective dealings with city

uniformity in their comparative paucity of such limitations. One of these States,—Vermont,—has absolutely no such limitations. States put together have fewer limitations than some of the Western or Southern States.

lack of uniformity is displayed among States geographically allied. Illinois, for example, has a large number of constitutional provisions; South Carolina, again, has many, while Tennessee has only three in all.

Provisions by decade and, for the most part, are now most numerous in those States whose Constitutions have been revised at the latest date. New Hampshire which revised its Constitution in 1903, yet inserted no larger number of restrictions than did Connecticut.

The growth of municipal government in the United States is reflected unmistakably in the growing attention which municipal matters demand from constitutional conventions.

SEVERAL STATE CONSTITUTIONS RELATING TO CITIES OR THEIR AFFAIRS.

Regulation of the Municipal Power of Cities.	Provisions Applying to City Officials. Etc.	Limitation of the Power of the State Over Cities. A—As to Franchises. B—As to Local Taxes. C—As to Assumption of City Debt.	Provisions regarding Special Acts.	A—Legisla- ture shall Provide for the organiza- tion of City Government. B—The Or- ganization of City Government.	Regulation of City's Right. A—To Grant Franchises. B—To Make By-Laws.	Provisions Regarding the Municipal Judiciary.	Provisions Regarding changing a County Seat.	Provisions Relating to Special Cities.	Miscellaneous Provisions
116 223(A)		XII 220(A)			XII 228(A)	VI 168	IV 104	XI 216 XII 225	XII 227
4		XII 12(C)	V 25	XII 3(A)	XII 4(B)		XIII 3		VII 52 IX 3+5 XVI 10+13 XIX 1
	IV 21+32 IV 25 XI 9	XI 12(B)	IV 25		XI 9 B XI 19	VI 14	IV 25 XI 2		XI 7+13+14
I 8	XII 3 XIV 12	XV 11(A)	XV 2 V 25				V 25 XIV 2		V 35
	XXIV (1877)								X 2 Am. XV+XVIII
		VIII 4(C)							V 9 XII
	III 20			III 24(A)		III 20	VIII 4		
		VII 8 (C)							
	III 19	XI 11(A) XII 3(C)			XII 2(B)		III 19 XVIII 2		XIII 5
(A) 0	IX 11	IV 20(C) IX 10(B) XI 4(A)	IV 22				IV 22 X 4	Am. 1891	
		X 6(C)							
			III 30				III 30		
				XII 5(A)			IX 1		
157 181 1903	Sec. 161 Sec. 167	Sec. 163(A) Sec. 176(C) Sec. 181(B)	Sec. 59 Sec. 156	Sec. 160(B)	Sec. 164(A)		Sec. 59 Sec. 64		
224 229 232 233 243 270	Art. 210	Art. 48(A)	Art. 49				Art. 278	Art. 130-158 Art. 309-320	Art. 199 Art. 209 Art. 212 Art. 215 Art. 276
	IV Part 1 Sec. 5		IV Part 3 Sec. 13			VI 8			
8			III 33					XI IV 27	
					Am. II (B)				

Illinois	1870	IV 22(B) XI 1(B C)	IX 12			IX 9(A) IX 10	IX 11	IV 20(C) IX 10(B) XI 4(A)	IV 22	
Indiana	1851	XI 1 (B C)	XIII 1					X 6(C)		
Iowa	1857	III 30(B) VIII 1(C)	XI 3		VIII 4				III 30	
Kansas	1859	XII 1(B C) XI 5(C)								XII 5(A)
Kentucky	1891	Sec. 59(B) Sec. 156(C)	Sec. 158 Sec. 159	Sec. 157	Sec. 179	Sec. 157 Sec. 181 Am. 1903	Sec. 161 Sec. 167	Sec. 163(A) Sec. 176(C) Sec. 181(B)	Sec. 59 Sec. 156	Sec. 160
Louisiana	1898	Art. 48(B)	Art. 281 Art. 270	Art. 281	Art. 58	Art. 224 Art. 229 Art. 232 Art. 233 Art. 243 Art. 270	Art. 210	Art. 48(A)	Art. 49	
Maine	1820	IV Part 3 Sec. 14(A)	XXII				IV Part 1 Sec. 5		IV Part 3 Sec. 13	
Maryland	1867	III 48(A)				III 58			III 33	
Massachusetts .	1820	Am. II (D)								
Michigan	1850	XV I (A)								XV 13(A)
Minnesota	1857	IV 33(B) IV 36(C) 1868 X 2 A			IX 15(1879)	IX 1(A)	IV 33		IV 33	
Mississippi	1890	IV 88(C) VII 178(C)			VII 183				IV 87	IV 80(A)
Missouri	1875	IV 53(B) IX 7(C) IX 10(B) XII 2(C)	X 12	X 12	IV 47 IX 6	X 1 + 11	IV 53 IX 13 + 14	X 10(B)	XII 2	IX 17(B)
Montana	1889	XV 2(A)	XIII 6	XIII 6	XIII 1	XII 5	V 36 XVI 6	XII 4(B) XIII 4(C)		
Nebraska	1875	III 15(B) XIII 1(B C)	XIV 2	XIV 2	XII 1	IX 6(A)	III 15 + 16	XIII 2 (A)	III 15	
Nevada	1864	VIII 1(A)			VIII 10			IX 4(C)	IV 21	VIII 8(A)
New Hampshire	1903				Part II V					
New Jersey . . .	1875	IV 7(B C)			I 19		IV 7		IV 7	
New York	1894	III 18(B) VIII 1 (A)	VIII 10		VIII 10		V 9 XII 3	III 18(A)	III 18 XII 2	XII 1(A)
North Carolina .	1875	VIII 1(A)	VII 7	VII 7	VII 7	VII 7				VIII 4(A)
North Dakota .	1889	II 69(B) VI 130(C)	XII 183 XII 184		XII 185		II 69		II 70	VI 130(A)
Ohio	1851	XIII 1(B) XIII 2(C)			VIII 6			VIII 5(C)		XIII 6(A)
Oregon	1857	XI 2(A)			XI 9			XI 8(C)	I 21	XI 5(A)
Pennsylvania ..	1873	III 7(B) XV 1(C D)	IX 8 + 10 XV 3	IX 8	IX 7		III 7	IX 9(C) XVII 9(A)		
Rhode Island ..	1842	Am. IX (C) (1892)								
South Carolina .	1895	III 34(B) VIII 1(C) VIII 2(D)	VIII 7	II 13		VIII 6 VIII 8		VIII 4(A)		VIII 3(A)
South Dakota . .	1889	III 23(B) X 1(C)	XIII 4 + 5 Am. 1896		XIII 1	XI 10(A)	III 26	X 3(A)	III 23	X 1 A
Tennessee	1870				II (29)	II (29)				
Texas	1876	III 56(B) XI 4(C) XI 5(A)	XI 5		III 52 XI 3	XI 4 XI 5	III 56		III 56	
Utah	1895	VI 26(B) XI 5(B C)	XIV 4 XIV 5	XIV 3	VI 31		VI 29 XII 17 XXI	XII 8(A) XIII 5(B) XIV 6(C)	VI 26	XI 5
Vermont	1796									
Virginia	1902	VIII 117(B C)	VIII 127		XIII 185	VIII 128 IX 136 XIII 173 + 170(A)	IV 63 VIII 120 + 122	VIII 124(A) XIII 185(C)	IV 51 + 63 + 64 VIII 126	VIII 120 VIII 121
Washington . . .	1889	II 28(B) XI 10(B C E)	VIII 6	VIII 6	VIII 7	XI 12 VII 9(A)	XI 8	XI 8(B)		
West Virginia ..	1872	VI 39(B E) XI 1(B C)	X 8	X 8		X 9	IV 8 VI 27	X 6(C) XI 5(A)	VI 39	
Wisconsin	1848	[XI 1 A] Am. IV 31(B) Am. IV 32(C)	Am. XI 3				XIII 9		Am. IV 32	XI 3(A)
Wyoming	1889	III 27(B) XIII 1(C) XIII 2(D) X 1(C)	XVI 4 + 5			XV 6	III 37 VI 15 XIV 1	XIII 4(A)	III 27	XIII 3(A)

Except where otherwise specified, Roman numerals stand for articles, Arabic numerals for sections.

Letters refer to classification at the

(A) 0	IX 11	IV 20(C) IX 10(B) XI 4(A)	IV 22				IV 22 X 4	Am. 1891	
		X 6(C)							
			III 30				III 30		
				XII 5(A)			IX 1		
157 181 1903	Sec. 161 Sec. 167	Sec. 163(A) Sec. 176(C) Sec. 181(B)	Sec. 59 Sec. 156	Sec. 160(B)	Sec. 164(A)		Sec. 59 Sec. 64		
224 229 232 233 243 270	Art. 210	Art. 48(A)	Art. 49				Art. 278	Art. 130-158 Art. 309-320	Art. 199 Art. 209 Art. 212 Art. 215 Art. 276
	IV Part 1 Sec. 5		IV Part 3 Sec. 13			VI 8			
8			III 33					XI IV 27	
					Am. II (B)				
				XV 13(A)		XV 14	X 8		X 7
(A)	IV 33		IV 33				IV 33		XI 2
			IV 87	IV 80(A)			XIV 259		XII 254
+11	IV 53 IX 13+14	X 10(B)	XII 2	IX 17(B)			IV 53 IX 2	IX 20-25 Am. 1900 VI 12+13	IX 15
5	V 36 XVI 6	XII 4(B) XIII 4(C)				VIII 24	XVI 2		
(A)	III 15+16	XIII 2 (A)	III 15				III 15		III 15
		IX 4(C)	IV 21	VIII 8(A)		VI 9			
									Part I VI Part II IX+X
	IV 7		IV 7			IV 7			
	V 9 XII 3	III 18(A)	III 18 XII 2	XII 1(A)		VI 5+17	III 18		
				VIII 4(A)					
	II 69		II 70	VI 130(A)			II 69 X 169		
		VIII 5(C)		XIII 6(A)			II 30		
		XI 8(C)	I 21	XI 5(A)			I 21		
	III 7	IX 9(C) XVII 9(A)					III 7		III 7
						X 7			
6 8		VIII 4(A)		VIII 3(A)			VII 8	Am. 1901	II 12 VII 11 VIII 5 VIII 10
0(A)	III 26	X 3(A)	III 23	X 1 A		V 23	III 23		Am. 1898
9)						XI 9			
	III 56		III 56				III 56 IX 2	XI 7	XI 8
	VI 29 XII 17 XXI	XII 8(A) XIII 5(B) XIV 6(C)	VI 26	XI 5			VI 26 XI 2		XI 6 XVI 6
128 36 173+170(A)	IV 63 VIII 120+122	VIII 124(A) XIII 185(C)	IV 51+63+64 VIII 126	VIII 120(B) VIII 121(A)	IV 65(B) VIII 125(A)	VI 98+99 VIII 118+119	IV 63		IV 50+51 VIII 123
2 0(A)	XI 8	XI 8(B)			XI 11(B)	IV 10	II 28 XI 2		
	IV 8 VI 27	X 6(C) XI 5(A)	VI 39			VII 19	VI 39		IV 4
	XIII 9		Am. IV 32	XI 3(A)		VII 2	Am. IV 31 XIII 8		
5	III 37 VI 15 XIV 1	XIII 4(A)	III 27	XIII 3(A)		V 1	III 27 XII 3		XIX 1

lighting contract with the city, namely, August, 1906, "to reduce its rates for private lighting 20 per cent. below the present rate."

2. For the purpose of "harnessing" the water power of the St. Louis River which empties at Duluth, and utilizing this power for electrical and other purposes on a large scale preparatory work was undertaken some years ago and more recently a powerful company was organized and financed. This company is more or less in the hands and under the direction of local capital and prominent citizens of Duluth are among its directing forces. Incidental to the furnishing of power this company sought and succeeded in having included in its general franchise a franchise also for electric lighting in the city of Duluth. This franchise to the Great Northern Power Company was granted on February 9, 1903, and the company has been granted to September, 1907, to get its general power plant in operation. This franchise, by its terms, is to run twenty-five years and the Power Company is to pay annually to the city one-tenth of 1 per cent. of its gross earnings.

That part of the franchise touching upon electric lighting provides that the rate charged shall at all times be "reasonable" and shall not exceed the maximum of twelve cents per Kilo-Watt hour meter measure. There are also provisions protecting the city, as a consumer of electric power, against discrimination in favor of private companies furnishing light for general use and of any consumer of like magnitude and under similar conditions. It is also provided that the city shall be furnished up to 1,000 horse-power for electric lights for streets, parks, public grounds and buildings, and Aerial Bridge on equally favorable terms.

It is also stipulated that if the Power Company fails to exercise its rights under the lighting part of its franchise within five years from the time of the commencement of its operations that part of its franchise may be revoked at the pleasure of the city. If, however, it does erect and place in operation such electric lighting plant, the city has the right, after five years, to purchase the same upon a valuation based upon the actual cost of duplication at time of such estimate plus 10 per cent., provision being made to arrive at such valuation by arbitration. It is specially provided that in such estimate nothing shall be added on account of franchise. The city may also purchase regardless of time limit whenever it is ready to agree to contract with the Power Company for a period of at least five years for power for such electric lighting, and if the city enters into such contract relation with the Power Company before the company shall have erected its lighting plant the city may revoke the Power Company's franchise in that regard.